

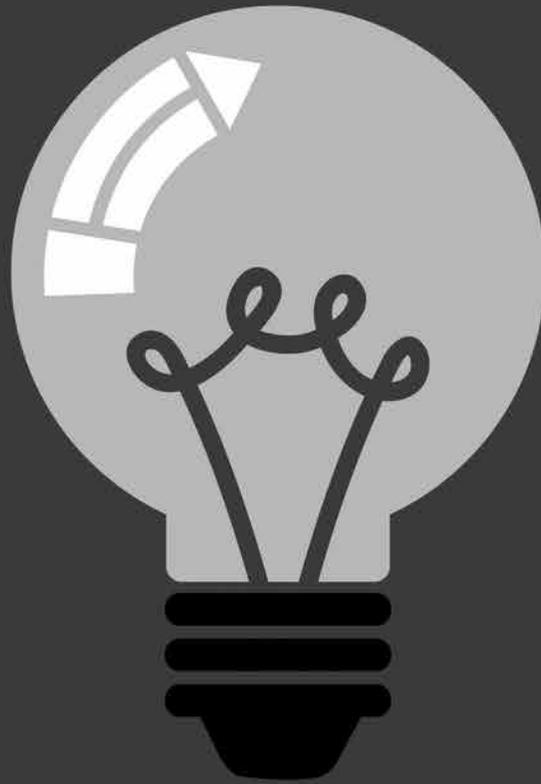


# CREATIVE WRITING IN SCIENCE

ACTIVITIES THAT **INSPIRE**

KATIE COPPENS

**NSTA**press  
National Science Teachers Association



# CREATIVE WRITING IN SCIENCE

**ACTIVITIES THAT INSPIRE**





# CREATIVE WRITING IN SCIENCE

## **ACTIVITIES THAT INSPIRE**

KATIE COPPENS

**NSTA**press  
National Science Teachers Association  
Arlington, Virginia



Claire Reinburg, Director  
Wendy Rubin, Managing Editor  
Rachel Ledbetter, Associate Editor  
Amanda O'Brien, Associate Editor  
Donna Yudkin, Book Acquisitions Coordinator

**ART AND DESIGN**  
Will Thomas Jr., Director  
Himabindu Bichali, Graphic Designer, cover and  
interior design

**PRINTING AND PRODUCTION**  
Catherine Lorrain, Director

**NATIONAL SCIENCE TEACHERS ASSOCIATION**

David L. Evans, Executive Director  
David Beacom, Publisher

1840 Wilson Blvd., Arlington, VA 22201  
[www.nsta.org/store](http://www.nsta.org/store)  
For customer service inquiries, please call 800-277-5300.

Copyright © 2016 by the National Science Teachers Association.  
All rights reserved. Printed in the United States of America.  
19 18 17 16 4 3 2 1

*NSTA is committed to publishing material that promotes the best in inquiry-based science education. However, conditions of actual use may vary, and the safety procedures and practices described in this book are intended to serve only as a guide. Additional precautionary measures may be required. NSTA and the authors do not warrant or represent that the procedures and practices in this book meet any safety code or standard of federal, state, or local regulations. NSTA and the authors disclaim any liability for personal injury or damage to property arising out of or relating to the use of this book, including any of the recommendations, instructions, or materials contained therein.*

**PERMISSIONS**

Book purchasers may photocopy, print, or e-mail up to five copies of an NSTA book chapter for personal use only; this does not include display or promotional use. Elementary, middle, and high school teachers may reproduce forms, sample documents, and single NSTA book chapters needed for classroom or noncommercial, professional-development use only. E-book buyers may download files to multiple personal devices but are prohibited from posting the files to third-party servers or websites, or from passing files to non-buyers. For additional permission to photocopy or use material electronically from this NSTA Press book, please contact the Copyright Clearance Center (CCC) ([www.copyright.com](http://www.copyright.com); 978-750-8400). Please access [www.nsta.org/permissions](http://www.nsta.org/permissions) for further information about NSTA's rights and permissions policies.

**Library of Congress Cataloging-in-Publication Data**

Names: Coppens, Katie, 1979-  
Title: Creative writing in science : activities that inspire / Katie Coppens.  
Description: Arlington, VA : National Science Teachers Association, [2016] |  
Includes bibliographical references and index.  
Identifiers: LCCN 2015046551 (print) | LCCN 2016007839 (ebook) | ISBN 9781941316351 (print) |  
ISBN 9781681400006 | ISBN 9781681400006 (e-book)  
Subjects: LCSH: English language--Study and teaching (Secondary) | Creative writing (Secondary education) |  
Science--Study and teaching (Secondary) | Interdisciplinary approach in education.  
Classification: LCC PE1066 .C59 2016 (print) | LCC PE1066 (ebook) | DDC 808/.0420712--dc23  
LC record available at <http://lcn.loc.gov/2015046551>

# CONTENTS

About the Author ..... vii

## Introduction

**Chapter 1:** Why Write Creatively in Science? .....3  
**Chapter 2:** Scoring Student Writing.....5  
**Chapter 3:** Chapter Format .....7

## Life Science Activities

**Chapter 4:** Every Tree Is a Character .....11  
**Chapter 5:** Postcard From a Biome .....21  
**Chapter 6:** Travel Blog About the Digestive System .....27  
**Chapter 7:** Phytoplankton Comic.....37  
**Chapter 8:** Motivational Speech by a Part of a Cell.....45

## Earth and Space Science Activities

**Chapter 9:** Group Poem: Earth's History .....53  
**Chapter 10:** Presenting ... the Rock Cycle! .....61  
**Chapter 11:** Sci-Fi: What Would the World Be Like If the KT Asteroid  
Had Never Hit? .....67  
**Chapter 12:** Packing List for the Planets.....79  
**Chapter 13:** Letter From the Moon to Earth.....85

# CONTENTS

## Engineering and Physical Science Activities

<b>Chapter 14:</b> Interview With an Atom .....	93
<b>Chapter 15:</b> Instructional Manual: How to Fly.....	101
<b>Chapter 16:</b> Skit: Newton's Laws.....	107
<b>Chapter 17:</b> Do I Matter? Water's Diary .....	113
<b>Chapter 18:</b> Engineering Editorial .....	119

## Appendixes

<b>Appendix 1:</b> Connections to <i>Common Core State Standards</i> for Writing and for Speaking and Listening .....	127
<b>Appendix 2:</b> Resources.....	131
Index .....	135

# ABOUT THE AUTHOR

**K**atie Coppens is an award-winning middle school language arts and science teacher. As a teacher of both subjects, she uses creative writing throughout her science curriculum to engage students and assess their knowledge. Since her career began in 2001, she has had a variety of teaching experiences, ranging from teaching a self-contained third-grade classroom to teaching high school English and biology while volunteering in Tanzania. She lives in Maine with her husband, who is a high school biology teacher, and their two children. For more information on the author and her publications, please visit [www.katiecoppens.com](http://www.katiecoppens.com).



Source: Peggy Becksvoort





# CHAPTER 9

## GROUP POEM: EARTH'S HISTORY

### Writing Style

Poem

### Purpose

Students will apply knowledge and vocabulary from a period of time in Earth's history to a poem. Students will combine their individual efforts to make one collaborative class poem.

### Overview

For this activity, students write a poem about an eon, era, period, or epoch. First, cut up the poem topics (pp. 57–59) and give one to each student. They are labeled with the time period, years it occurred, and what number they are in the sequence. When it is time to share, have students sit in order. Reading the poems aloud gives the story of Earth's history, while celebrating the individual contribution of students and the collaboration of the class as a whole.

### Language Arts Connections

You can teach students a variety of poetry forms. Many students will be drawn to the haiku because of its simple 5-7-5 syllable format. However, it is important to emphasize that the 17 syllables be used effectively. Students could also try this form of poetry but write multiple haikus to show the events of their time period. Other students may choose an acrostic poem in which you spell the word out and write a poem using the letters. However, this form of poetry often leads to a word being used because it starts with the right letter and not because it is the best choice.

For free verse, use the model provided to show how line breaks in the poem create pauses and how repetition can create rhythm. Stanzas are used much like paragraphs to show a transition in the writing. Remind students that poems do not have to rhyme. If they choose to rhyme, their poem can benefit from following a pattern such as ABAB, ABBA, AABA, or ABCB. For example, a stanza with an AABB rhyming pattern would read as follows:

Warm, flowing lava began to pool  
Then, at last, the rock did cool  
Water vapor formed a sea  
While underwater vents let air flow free



## CHAPTER 9

### **Differentiation Strategies**

Having a variety of options for poem format is an example of differentiation. Another method is to give students one of the mass extinction categories, rather than a time period. Those categories are simpler for students to understand because the emphasis is on the extinctions that occurred and the specific event(s) that caused them, rather than having a variety of events to choose from in a large time period.

Some students may need help pronouncing words in their poem. It can benefit students to rewrite their poem with words broken into syllables or sounds, such as “Pale-e-o-zo-ic.” This strategy will help students feel more confident when reading in front of the class.

### **Connections to the *Next Generation Science Standards***

- **3-LS4-1:** Analyze and interpret data from fossils to provide evidence of the organisms and the environment from which they lived long ago.
- **4-ESS1-1:** Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.
- **MS-ESS1-4:** Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth’s 4.6-billion-year-old history.
- **MS-LS4-1:** Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.
- **HS-ESS1-6:** Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth’s formation and early history.

### **Applications to Other Science Areas**

You could apply this assignment to any topic in which students can have an individual part that comes together to show an entire linear concept. For example, you could have students write poems for the phases of the Moon or various parts of a food web.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

### Group Poem: Earth's History

Earth's history is broken into eons, eras, periods, and epochs. Your assignment is to write a poem that shows your knowledge of the events of a given period of time. When everyone is finished, the class will read the poems in chronological order to learn the major events of Earth's history. The organizer below will help you write your poem.

I am responsible for \_\_\_\_\_, which will be read \_\_\_\_\_.

This occurred from \_\_\_\_\_ to \_\_\_\_\_ years ago.

Major events that occurred during this time include the following:

You will be scored according to the following rubric:

AREA	1 DOES NOT MEET EXPECTATIONS	2 PARTIALLY MEETS EXPECTATIONS	3 MEETS EXPECTATIONS	4 EXCEEDS EXPECTATIONS
SCIENCE CONTENT	The poem lacks correct information and shows that you do not understand the major events of this time period, or the poem shows consistent misconceptions.	The poem includes accurate information but does not focus on the major events of the time period, or the poem demonstrates some minor misconceptions.	The poem includes accurate information that shows an overall understanding of the time period's major events.	The poem includes detailed and accurate information, showing an understanding of the time period that is distinguished (very strong).

## CHAPTER 9

Name: \_\_\_\_\_ Date: \_\_\_\_\_

### Group Poem: Earth's History

Earth's history is broken into eons, eras, periods, and epochs. Your assignment is to write a poem that shows your knowledge of the events of a given period of time. When everyone is finished, the class will read the poems in chronological order to learn the major events of Earth's history. The organizer below will help you write your poem.

I am responsible for \_\_\_\_\_, which will be read \_\_\_\_\_.

This occurred from \_\_\_\_\_ to \_\_\_\_\_ years ago.

Major events that occurred during this time include the following:

You will be scored according to the following rubric:

AREA	1 DOES NOT MEET EXPECTATIONS	2 PARTIALLY MEETS EXPECTATIONS	3 MEETS EXPECTATIONS	4 EXCEEDS EXPECTATIONS
SCIENCE CONTENT	The poem lacks correct information and shows that you do not understand the major events of this time period, or the poem shows consistent misconceptions.	The poem includes accurate information but does not focus on the major events of the time period, or the poem demonstrates some minor misconceptions.	The poem includes accurate information that shows an overall understanding of the time period's major events.	The poem includes detailed and accurate information, showing an understanding of a time period that is distinguished (very strong).
LANGUAGE USE	Writing flow and spelling errors make the poem difficult to understand.	Writing flow and spelling errors distract the reader.	The spelling is correct, and the flow of the poem is smooth to the reader.	The spelling, flow, and style of the poem are distinguished (very strong).

## Group Poem: Earth's History

---

*(Cut and hand the strips out to students.)*

(1) Precambrian Time: 4.6 billion to 541 million years ago

(2) Hadean Time: 4.6 billion to 4 billion years ago

(3) Archaen Eon: 4 billion to 2.5 billion years ago

(4) Proterozoic Eon: 2.5 billion to 541 million years ago

(5) Phanerozoic Eon: 541 million years ago to the present

(6) Paleozoic Era: 541 million to 252 million years ago

(7) Cambrian period: 541 million to 485 million years ago

(8) Ordovician Period: 485 million to 443 million years ago

(9) Silurian Period: 443 to 419 million years ago

(10) Devonian Period: 419 million to 359 million years ago

(11) Carboniferous Period: 359 to 299 million years ago

(12) Permian Period: 299 million to 252 million years ago

(13) Mesozoic Era: 252 million to 66 million years ago

## CHAPTER 9

- (14) Triassic Period: 252 million to 201 million years ago
- (15) Jurassic Period: 201 million to 145 million years ago
- (16) Cretaceous Period: 145 million to 66 million years ago
- (17) Cenozoic Era: 66 million years ago to the present
- (18) Paleogene Period: 66 million to 23 million years ago
- (19) Paleocene Epoch: 66 million to 56 million years ago
- (20) Eocene Epoch: 56 million to 33.9 million years ago
- (21) Oligocene Epoch: 33.9 million to 23 million years ago
- (22) Neogene Period: 23 million to 2.58 million years ago
- (23) Miocene Epoch: 23 million to 5.3 million years ago
- (24) Pliocene Epoch: 5.3 million to 2.58 million years ago
- (25) Quaternary Period: 2.58 million years ago to the present
- (26) Pleistocene Epoch: 2.58 million to 11,700 years ago
- (27) Holocene Epoch: 11,700 years ago to present day

## **Mass Extinctions**

(8.5) Ordovician-Silurian Mass Extinction: 443 million years ago

(10.5) Late Devonian Mass Extinction: 359 million years ago

(12.5) Permian Mass Extinction: 252 million years ago

(14.5) Triassic-Jurassic Mass Extinction: 201 million years ago

(16.5) Cretaceous-Tertiary Mass Extinction: 66 million years ago

## Group Poem: Earth's History: Model for Precambrian Time

---

### Precambrian Time Haiku

Whirling, hot gases  
Lava cools, then water flows  
Bacteria live

### Precambrian Time Free Verse

For most of Earth's past  
It felt alone in the emptiness of space  
Spinning, waiting, hoping  
Unaware of what may come

It began over four billion years ago  
With hot gases and lava  
Colliding, combining, cooling  
Unaware of what may come

As rock formed  
Layers built up, creating a crust  
A crucial crust that was hardening  
Unaware of what may come

Slowly, water vapor united  
Eventually, forming our seas  
Vents release bubbles, floating freely  
Unaware of what may come

Water and oxygen create life  
Simple bacteria grow, mate, evolve  
Leading to multicellular organisms  
That grow, mate, and evolve ...

Unaware of what may come.

# INDEX

Page numbers in **boldface** type refer to tables.

## A

- Airplane flight: Instructional Manual: How to Fly, 101–106
- Applications to other science areas, 7.  
*See also specific activities*
- Argumentative writing, 7
  - Engineering Editorial, 119–124
  - Letter From the Moon to Earth, 85–90
  - Motivational Speech by a Part of a Cell, 45–50
- Assessment through creative writing, 3
- Assignment sheets, 8. *See also specific activities*
- Astronomy activities
  - Letter From the Moon to Earth, 85–90
  - Packing List for the Planets, 79–84
  - Sci-Fi: What Would the World Be Like if the KT Asteroid Had Never Hit?, 67–77
- Atomic composition: Interview With an Atom, 93–99

## B

- Benefits of creative writing, 3
- Biology. *See* Life science activities
- Biomes: Postcard From a Biome, 21–26

## C

- Cell structure: Motivational Speech by a Part of a Cell, 45–50
- Cellular respiration, 11, 12, 37, 38, 46
- Comics: Phytoplankton Comic, 37–43
- Common Core State Standards (CCSS)* connections of activities, 3, 127–130. *See also* Language arts connections

## Conventions, scoring of, 5

- narrative rubric for, **6**
- for specific activities
  - Do I Matter? Water’s Diary, 116
  - Engineering Editorial, 122
  - Every Tree Is a Character, 14
  - Instructional Manual: How to Fly, 104
  - Interview With an Atom, 96
  - Letter From the Moon to Earth, 88
  - Motivational Speech by a Part of a Cell, 48
  - Packing List for the Planets, 82
  - Phytoplankton Comic, 40
  - Postcard From a Biome, 24
  - Presenting...the Rock Cycle!, 64
  - Sci-Fi: What Would the World Be Like if the KT Asteroid Had Never Hit?, 71
  - Skit: Newton’s Laws, 109
  - Travel Blog About the Digestive System, 30

## D

- Descriptive writing
  - Every Tree Is a Character, 11–20
  - Postcard From a Biome, 21–26
  - Travel Blog About the Digestive System, 27–35
- Differentiation strategies, 7. *See also specific activities*
- Digestive system: Travel Blog About the Digestive System, 27–35
- Dinosaurs: Sci-Fi: What Would the World Be Like if the KT Asteroid Had Never Hit?, 67–77
- Do I Matter? Water’s Diary, 113–117
  - applications to other science areas, 114



## INDEX

- assignment and scoring of, 115–116
  - connections to *Common Core State Standards*, 128–130
  - connections to *Next Generation Science Standards*, 113–114
  - differentiation strategies for, 113
  - language arts connections of, 113
  - model of, 117
  - purpose and overview of, 113
  - resources for, 134
- E**
- Earth and space science activities
    - Group Poem: Earth’s History, 53–60
    - Letter From the Moon to Earth, 85–90
    - Packing List for the Planets, 79–84
    - Presenting...the Rock Cycle!, 61–66
    - Sci-Fi: What Would the World Be Like if the KT Asteroid Had Never Hit?, 67–77
  - Elements: Interview With an Atom, 93–99
  - Engineering and physical science activities
    - Do I Matter? Water’s Diary, 113–117
    - Engineering Editorial, 119–124
    - Instructional Manual: How to Fly, 101–106
    - Interview With an Atom, 93–99
    - Skit: Newton’s Laws, 107–112
  - Engineering Editorial, 119–124
    - applications to other science areas, 120
    - assignment and scoring of, 121–122
    - connections to *Common Core State Standards*, 128–130
    - connections to *Next Generation Science Standards*, 120
    - differentiation strategies for, 119–120
    - graphic organizer for, 123
    - language arts connections of, 119
    - model of, 124
    - purpose and overview of, 119
    - resources for, 134
  - Every Tree Is a Character, 11–20
    - applications to other science areas, 12
    - assignment and scoring of, 13–14
    - connections to *Common Core State Standards*, 128–130
    - connections to *Next Generation Science Standards*, 12
- differentiation strategies for, 11
  - graphic organizers for, 15–16
  - language arts connections of, 11
  - models of, 17–20
  - purpose and overview of, 11
  - resources for, 131
- Expository writing
- Instructional Manual: How to Fly, 101–106
  - Packing List for the Planets, 79–84
- F**
- Flexibility of activities, 3
  - Flight: Instructional Manual: How to Fly, 101–106
  - Format of chapters, 7–8
  - Formative assessments, 3
- G**
- Graphic novella: Phytoplankton Comic, 37–43
  - Graphic organizers, 8. *See also specific activities*
  - Group Poem: Earth’s History, 53–60
    - applications to other science areas, 54
    - assignment and scoring of, 55–56
    - connections to *Common Core State Standards*, 128–130
    - connections to *Next Generation Science Standards*, 54
    - differentiation strategies for, 54
    - graphic organizer for, 57–59
    - language arts connections of, 53
    - model of, 60
    - purpose and overview of, 53
    - resources for, 133
- H**
- Haikus, 53, 60
- I**
- Importance of creative writing, 3
  - Instructional Manual: How to Fly, 101–106
    - applications to other science areas, 102
    - assignment and scoring of, 103–104
    - connections to *Common Core State Standards*, 128–130

- connections to *Next Generation Science Standards*, 101–102
- differentiation strategies for, 101
- graphic organizer for, 105
- language arts connections of, 101
- model of, 106
- purpose and overview of, 101
- resources for, 134
- Integrating writing into content area, 3
- Interview With an Atom, 93–99
- applications to other science areas, 94
- assignment and scoring of, 95–96
- connections to *Common Core State Standards*, 128–130
- connections to *Next Generation Science Standards*, 94
- differentiation strategies for, 93
- graphic organizer for, 97
- language arts connections of, 93
- model of, 98–99
- purpose and overview of, 93
- resources for, 134
- L**
- Language arts connections, 7. *See also Common Core State Standards; specific activities*
- Language use, scoring of, 5
- for Group Poem: Earth’s History activity, 56
- poetry rubric for, **5**
- Learning styles, 3
- Letter From the Moon to Earth, 85–90
- applications to other science areas, 86
- assignment and scoring of, 87–88
- connections to *Common Core State Standards*, 128–130
- connections to *Next Generation Science Standards*, 85–86
- differentiation strategies for, 85
- graphic organizer for, 89
- language arts connections of, 85
- model of, 90
- purpose and overview of, 85
- resources for, 133–134
- Letter writing
- Engineering Editorial, 119–124
- Letter From the Moon to Earth, 85–90
- Life science activities
- Every Tree Is a Character, 11–20
- Motivational Speech by a Part of a Cell, 45–50
- Phytoplankton Comic, 37–43
- Postcard From a Biome, 21–26
- Travel Blog About the Digestive System, 27–35
- M**
- Models of activities, 3, 8. *See also specific activities*
- Moon: Letter From the Moon to Earth, 85–90
- Motivational Speech by a Part of a Cell, 45–50
- applications to other science areas, 46
- assignment and scoring of, 47–48
- connections to *Common Core State Standards*, 128–130
- connections to *Next Generation Science Standards*, 46
- differentiation strategies for, 45–46
- graphic organizer for, 49
- language arts connections of, 45
- model of, 50
- purpose and overview of, 45
- resources for, 132
- N**
- Narrative writing, 3, 7, 8
- Do I Matter? Water’s Diary, 113–117
- Every Tree Is a Character, 11–20
- Postcard From a Biome, 21–26
- Presenting...the Rock Cycle!, 61–64
- rubric for, **6**
- Sci-Fi: What Would the World Be Like if the KT Asteroid Had Never Hit?, 67–77
- Travel Blog About the Digestive System, 27–35
- Newspaper article writing: Sci-Fi: What Would the World Be Like if the KT Asteroid Had Never Hit?, 67–77
- Newton’s laws of motion: Skit: Newton’s Laws, 107–112
- Next Generation Science Standards* connections of activities, 3, 7. *See also specific activities*

## INDEX

### O

- Oral presentations, scoring of
  - Interview With an Atom, 95, 96
  - Motivational Speech by a Part of a Cell, 47, 48
  - Presenting...the Rock Cycle!, 63, 64
  - Skit: Newton's Laws, 108, 109

### P

- Packing List for the Planets, 79–84
  - applications to other science areas, 80
  - assignment and scoring of, 81–82
  - connections to *Common Core State Standards*, 128–130
  - connections to *Next Generation Science Standards*, 80
  - differentiation strategies for, 79
  - graphic organizer for, 83
  - language arts connections of, 79
  - model of, 84
  - purpose and overview of, 79
  - resources for, 133
- Personification, 7, 11, 28, 85, 113
- Persuasive writing
  - Engineering Editorial, 119–124
  - Letter From the Moon to Earth, 85–90
  - Motivational Speech by a Part of a Cell, 45–50
- Photosynthesis, 11, 12, 17, 18, 20, 37, 38, 62
- Physical sciences. *See* Engineering and physical science activities
- Phytoplankton Comic, 37–43
  - applications to other science areas, 38
  - assignment and scoring of, 39–40
  - connections to *Common Core State Standards*, 128–130
  - connections to *Next Generation Science Standards*, 38
  - differentiation strategies for, 37
  - graphic organizer for, 41–42
  - language arts connections of, 37
  - model of, 43
  - purpose and overview of, 37
  - resources for, 132
- Play writing. *See also* Skit writing
  - Interview With an Atom, 93
  - Presenting...the Rock Cycle!, 61
  - Skit: Newton's Laws, 107

### Poetry writing, 3, 7

- Group Poem: Earth's History, 53–60
- Presenting...the Rock Cycle!, 61–64, 66
  - rubric for, **5**
- Point of view, 7, 11, 12, 13, 14, 16, 45, 47, 48, 113
- Postcard From a Biome, 21–26
  - applications to other science areas, 22
  - assignment and scoring of, 23–24
  - connections to *Common Core State Standards*, 128–130
  - connections to *Next Generation Science Standards*, 21–22
  - differentiation strategies for, 21
  - graphic organizer for, 25
  - language arts connections for, 21
  - model of, 26
  - purpose and overview of, 21
  - resources for, 131
- Presenting...the Rock Cycle!, 61–66
  - applications to other science areas, 62
  - assignment and scoring of, 63–64
  - connections to *Common Core State Standards*, 128–130
  - connections to *Next Generation Science Standards*, 62
  - differentiation strategies for, 61–62
  - graphic organizer for, 65
  - language arts connections of, 61
  - model of, 66
  - purpose and overview of, 61
  - resources for, 133
- Public speaking. *See* Oral presentations

### R

- Resources, 131–134
- Rock cycle: Presenting...the Rock Cycle!, 61–66
- Rubrics, 3, 8. *See also specific activities*
  - narrative, **6**
  - poetry, **5**

### S

- Sci-Fi: What Would the World Be Like if the KT Asteroid Had Never Hit?, 67–77
  - applications to other science areas, 69
  - assignment and scoring of, 70–71

- connections to *Common Core State Standards*, 128–130
- connections to *Next Generation Science Standards*, 68–69
- differentiation strategies for, 67–68
- graphic organizers for, 72–75
- language arts connections of, 67
- models of, 76–77
- purpose and overview of, 67
- resources for, 133
- Science content, scoring of, 5, 8
- narrative rubric for, **6**
- poetry rubric for, **5**
- for specific activities
- Do I Matter? Water’s Diary, 115, 116
  - Engineering Editorial, 121, 122
  - Every Tree Is a Character, 13, 14
  - Group Poem: Earth’s History, 55, 56
  - Instructional Manual: How to Fly, 103, 104
  - Interview With an Atom, 95, 96
  - Letter From the Moon to Earth, 87, 88
  - Motivational Speech by a Part of a Cell, 47, 48
  - Packing List for the Planets, 81, 82
  - Phytoplankton Comic, 39, 40
  - Postcard From a Biome, 23, 24
  - Presenting...the Rock Cycle!, 63, 64
  - Sci-Fi: What Would the World Be Like if the KT Asteroid Had Never Hit?, 70, 71
  - Skit: Newton’s Laws, 108, 109
  - Travel Blog About the Digestive System, 27, 29, 30
- Science vocabulary use, scoring of
- narrative rubric for, **6**
- for specific activities
- Do I Matter? Water’s Diary, 115, 116
  - Every Tree Is a Character, 13, 14
  - Instructional Manual: How to Fly, 103, 104
  - Letter From the Moon to Earth, 87, 88
  - Motivational Speech by a Part of a Cell, 47, 48
  - Packing List for the Planets, 81, 82
  - Phytoplankton Comic, 39, 40
  - Postcard From a Biome, 23, 24
  - Presenting...the Rock Cycle!, 63, 64
  - Sci-Fi: What Would the World Be Like if the KT Asteroid Had Never Hit?, 70, 71
- Skit: Newton’s Laws, 108, 109
- Travel Blog About the Digestive System, 29, 32
- Scoring student writing, 5. *See also specific activities*
- narrative rubric, **6**
  - poetry rubric, **5**
- Skit: Newton’s Laws, 107–112
- applications to other science areas, 107
  - assignment and scoring of, 108–109
  - connections to *Common Core State Standards*, 128–130
  - connections to *Next Generation Science Standards*, 107
  - differentiation strategies for, 107
  - graphic organizer for, 110
  - language arts connections of, 107
  - model of, 111–112
  - purpose and overview of, 107
  - resources for, 134
- Skit writing. *See also* Play writing
- Interview With an Atom, 93, 95, 96, 97
  - Presenting...the Rock Cycle!, 61, 63, 64
  - Skit: Newton’s Laws, 107–112
- Song writing: Presenting...the Rock Cycle!, 61, 63, 64
- States of matter: Do I Matter? Water’s Diary, 113–117
- Summative assessments, 3
- T**
- Travel Blog About the Digestive System, 27–35
- applications to other science areas, 28
  - assignment and scoring of, 29, 30
  - connections to *Common Core State Standards*, 128–130
  - connections to *Next Generation Science Standards*, 28
  - differentiation strategies for, 27–28
  - graphic organizers for, 31–33
  - language arts connections of, 27
  - model of, 34–35
  - purpose and overview of, 27
  - resources for, 132
- Trees: Every Tree Is a Character, 11–20

## INDEX

### V

Vocabulary. *See* Science vocabulary use  
Voice, 7, 11, 27, 37, 87, 88, 113, 119

### W

Water: Do I Matter? Water's Diary, 113–117  
Writing fluency, scoring of, 5  
    narrative rubric for, **6**  
    for specific activities  
        Do I Matter? Water's Diary, 116  
        Engineering Editorial, 122  
        Every Tree Is a Character, 14

Instructional Manual: How to Fly, 104  
Interview With an Atom, 96  
Letter From the Moon to Earth, 88  
Motivational Speech by a Part of a Cell, 48  
Packing List for the Planets, 82  
Phytoplankton Comic, 40  
Postcard From a Biome, 24  
Presenting...the Rock Cycle!, 64  
Sci-Fi: What Would the World Be Like if the  
    KT Asteroid Have Never Hit?, 71  
Skit: Newton's Laws, 109  
Travel Blog About the Digestive System, 30

# CREATIVE WRITING IN SCIENCE

## ACTIVITIES THAT **INSPIRE**

“By assessing students through creative writing, you will see new strengths in your students and have a better understanding of both their writing skills and science knowledge.”

—from Chapter 1 of *Creative Writing in Science*

Who knew that writing plays, poems, and even comics could help students learn science? When Katie Coppens, the science and English teacher who developed this book, blended science and writing in her own classroom, she watched students become stronger in both subjects. Her experience prompted her to write this classroom resource book, which features activities that integrate writing with content in life science, Earth and space science, engineering, and physical science for grades 3–12.

You can tell a teacher wrote the book because it’s so flexible and classroom friendly. Each of the 15 activities comes with strategies for teaching a creative writing style—whether poetry or prose. You can use the assignments as in-class activities, homework, or final assessments for a unit. Also included are reproducible handouts, graphic organizers, writing models (to guide instruction and help students better understand your expectations), scoring rubrics, and connections to the *Next Generation Science Standards* and *Common Core State Standards*.

Whether you encourage students to write a travel blog about the digestive system, a packing list for the planets, or an interview with an atom, you’ll inspire them to be more imaginative while you enjoy new strategies for assessing their scientific understanding.



Grades 3–12

**NSTA**press  
National Science Teachers Association

PB411X  
ISBN: 978-1-941316-35-1



9 781941 316351